IN THE ABSTRACT:

Please amend the abstract as follows:

The present invention is directed to a method for recovering 3D scene structure and camera motion from image data obtained from a multi-image sequence, wherein a reference image of the sequence is taken by a camera at a reference perspective and one or more successive images of the sequence are taken at one or more successive different perspectives by translating and/or rotating the camera, the method comprising the steps of determining image data shifts for each successive image with respect to the reference image; ~~the shifts being derived from the camera translation and/or rotation from the reference perspective to the successive different perspectives;~~ constructing a shift data matrix that incorporates the image data shifts for each image, wherein ~~calculating a rank-1 factorizations from the shift data matrix using SVD, with one of the rank-1 factors being a vector corresponding to the 3D structure and the other rank-1 factor being a vector corresponding to the size of the camera motions~~ a first vector corresponds to the 3D structure and a second vector corresponds to the size of the camera motion; dividing the successive images into ~~smoothing~~ windows; ~~recovering the direction of camera motion from the first vector corresponding to the 3D structure by solving a linear equation; and~~ ~~recovering the 3D structure by solving a linear equation using the recovered camera motion. In accordance with the present invention, the method includes computing a first projection matrix; recovering camera rotation vectors from the shift data matrix, and the first projection matrix; computing a second projection matrix; and recovering the direction of camera translation using the shift data matrix, the reference image, the~~

~~second projection matrix and the recovered camera rotation vectors. In addition the method includes recovering the 3D structure from the shift data matrix, the reference image, the recovered camera rotation vectors and the recovered direction of translation vectors.~~ and determining the directions of camera motion and 3D structure from the first and second vector between the windows.

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